

Claims:

1. (Original) A hand held device for joining the free ends of thermoplastic material comprising a body including a pair of clamping means, one-half of the pair of clamping means on each side of the body, to hold the free ends in juxtaposition, and to compress the free ends together, including first adjustment means to adjust the distance between the free ends and apply a compressive force between the free ends, and including heating means and means to pass the heating means between the free ends of the thermoplastic material, whereby the heating means is passed between the free ends of the thermoplastic material, thereby softening the free ends of the thermoplastic material, after which the softened free ends are compressed together using the adjustment means to adjust the clamp means towards each other and compress the free ends until the softened free ends fuse together and cool.

2. (Original) The device of claim 1 wherein the heating means comprises an electrically conductive member, and a source of electrical energy to pass electricity through and heat the conductive member.

3. (Original) The device of claim 2 wherein the conductive member is a ni-chrome wire or pad.

4. (Original) The device of claim 2 wherein the source of electrical energy comprises at least one battery.

5. (Original) The device of claim 1 wherein the first adjustment means comprises a threaded rod that is securely journaled in the body, that is threaded right and left hand on opposite ends of the threaded rod, each opposite end projecting on opposite sides of the body, and each threaded end received in corresponding right and left hand threads of the pair of clamping means, whereby turning the threaded rod moves the two halves of the pair of clamping means towards or away from each other.

6. (Original) The device of claim 1 wherein the clamping means comprises a pair of jaws that are cut out to receive the free ends of the thermoplastic material and wherein the pair of jaws include second adjustment means to enable movement of one jaw relative to the other jaw to clamp the free ends of the thermoplastic material in vice-like fashion.

7. (Original) The device of claim 6 wherein the means to enable movement of one jaw of the clamping means relative to the other jaw of the clamping means comprises a threaded screw member that passes through a non-threaded hole in one jaw and is received in corresponding threads in the other jaw, whereby turning the threaded screw member changes the distance between the jaws, and compresses the free ends of the thermoplastic material between the jaws and firmly holds the free ends in vice-like fashion, and where each side of the pair of clamping means can hold the free ends of the thermoplastic material independently.

8. (Original) The device of claim 6 further including first guide rods that are securely fixed in one of the jaws, and that pass through a hole in register with the other jaw, to prevent rotation of the jaws around the second adjustment means.

9. (Original) The device of claim 6 further including second guide rods that are securely fixed in the body, and project past the body on each side of the body, and corresponding holes in each side of the clamping means, in register with the second guide rods, whereby the clamping means are maintained in register when the first adjustment means is applied, to prevent the two halves of the clamping means from rotating around the first adjustment means.

10. (Original) The device of claim 1 wherein a heated wire is held in a wire holding means, which is securely connected to third guide rods, slidably engaged by the body, whereby the wire holding means, and heated wire, can be pushed or pulled between the free ends of the thermoplastic material and soften the free ends, the third guide rods being in slidable register with corresponding holes in the body of the device.

11. (Original) A method of welding together free ends of thermoplastic continuous belt comprising clamping each of the free ends of the thermoplastic belt between a pair of clamping jaws, axially adjusting the distance between each pair of clamping jaws relative to the other, to position the free ends of the thermoplastic belt at a suitable distance to pass a heating means heated by battery power between the free ends of the thermoplastic

belt, passing a heating means between the free ends of the thermoplastic belt and softening the free ends of the thermoplastic belt, and axially compressing the softened free ends of the thermoplastic belt together until they fuse and cool.

12. (New) A method of belt forming comprising heating thermoplastic ends of the belt to a temperature sufficient to soften and fuse the ends together by using a self contained heating power source to heat a heating element temporarily in contact with both belt ends which ends are compressed together to join the ends.

13. (New) The method of claim 12 comprising using battery power as the self contained heating power source.

14. (New) The method of claim 12 comprising using ordinary batteries as the self contained heating power source.

15. (New) The method of claim 12 comprising using solid state controllers producing an electrically pulsating current to modulate the duration of the electrical pulse through the heating element.

16. (New) The method of claim 12 comprising using a heating wire as the heating element.

17. (New) The method of claim 12 comprising using a ni-chrome wire as the heating element.
18. (New) The method of claim 12 comprising using a heating ribbon as the heating element.
19. (New) The method of claim 12 comprising using a ni-chrome ribbon as the heating element.
20. (New) The method of claim 12 comprising removing the heating element from contact with the belt ends upon visually observing softening of the ends to their thermoplastic melting point while maintaining pressing the ends to join them.
21. (New) The method of claim 12 comprising forming the belt on site of belt operation.
22. (New) The method of claim 12 comprising holding the belt ends in axial alignment while passing the heating element at an angle to the belt ends.
23. (New) The method of claim 12 comprising holding the belt ends in axial alignment with each other while passing the heating element at a perpendicular angle to the belt ends.

24. (New) The method of claim 12 comprising holding the belt ends in axial alignment with each other while passing the heating element at about a 45 degree angle to the belt ends.

25. (New) The method of claim 12 comprising moving the self contained heating power source and heating element in unison while the heating element is in temporary contact with the belt ends.

26. (New) The method of claim 12 comprising maintaining the self contained heating power source stationary while moving the heating element in temporary contact with the belt ends.

27. (New) A method of belt forming comprising heating thermoplastic ends of the belt to a temperature sufficient to soften and fuse the ends together by using a manually held heating power source to heat a heating element temporarily in contact with both ends which ends are compressed together to join the free ends.

28. (New) The method of claim 27 comprising using battery power as the manually held heating power source.

29. (New) The method of claim 27 comprising using ordinary batteries as the manually held heating power source.

30. (New) The method of claim 27 comprising using solid state controllers producing an electrically pulsating current to modulate the duration of an electrical pulse passed through the heating element.

31. (New) The method of claim 27 comprising using a hot wire as the heating element.

32. (New) The method of claim 27 comprising using a ni-chrome wire as the heating element.

33. (New) The method of claim 27 comprising using a heating ribbon as the heating element.

34. (New) The method of claim 27 comprising using a ni-chrome ribbon as the heating element.

35. (New) The method of claim 27 comprising removing the heating element from contact with the belt ends upon visually observing softening of the ends to their thermoplastic melting point while maintaining pressing of the ends to join them.

36. (New) The method of claim 27 comprising forming of the belt at site of belt operation.

37. (New) The method of claim 27 comprising holding the belt ends in axial alignment while passing the heating element at an angle to the belt ends.

38. (New) The method of claim 27 comprising holding the belt ends in axial alignment while passing the heating element at a perpendicular angle to the belt ends.

39. (New) The method of claim 27 comprising holding the belt ends in axial alignment while passing the heating element at about a 45 degree angle to the belt ends.

40. (New) The method of claim 27 comprising moving the manually held heating power source in unison with the heating element while the heating element is in temporary contact with the belt ends.

41. (New) The method of claim 27 comprising maintaining the manually held heating power source stationary while moving the heating element in temporary contact with the belt ends.

42. (New) A method of belt forming comprising heating thermoplastic ends of the belt to a temperature sufficient to soften and fuse the ends together by using a portable hand held heating power source to heat a heating element temporarily in contact with both ends which ends are compressed together to join the free ends.

43. (New) A method of belt forming comprising heating thermoplastic ends of the belt to a temperature sufficient to soften and fuse the ends together by using a cordless heating power source to heat a heating element temporarily in contact with both ends which ends are compressed together to join the free ends.

44. (New) A method of belt repair comprising heating thermoplastic ends of belt material to a temperature sufficient to soften and fuse the ends by using a self contained heating power source to heat a heating element temporarily in contact with belt ends which ends are compressed together.

45. (New) A method of belt repair comprising heating thermoplastic ends of belt material to a temperature sufficient to soften and fuse the ends together by using a manually held heating power source to heat a heating element temporarily in contact with belt ends which ends are compressed together.

46. (New) A method of belt repair comprising heating thermoplastic ends of belt material to a temperature sufficient to soften and fuse the ends together by using a portable hand held heating power source to heat a heating element temporarily in contact with belt ends which ends are compressed together.

47. (New) A method of belt repair comprising heating thermoplastic ends of belt material to a temperature sufficient to soften and fuse the ends together by using a

cordless heating power source to heat a heating element temporarily in contact with belt ends which ends are compressed together.

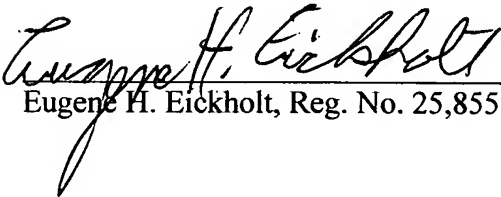
48. (New) A kit for splicing thermoplastic belt ends together comprising an assembly having a heating element used to soften and fuse belt ends, belt ends holders used to axially align belt ends into contact, a self contained heating power source used to heat the heating element, a compartment to house the power source and a switch operated circuit used to connect the power source with the heating element.

49. (New) A method of using a kit to splice thermoplastic belt ends together comprising manually pressing the belt ends into contact while being axially aligned on belt ends holders of the kit, heating a heating element on the kit by engaging a circuit switch on the kit to provide heating power from a self contained heating power source of the kit, bringing the heating element of the kit into temporary heating contact with the belt ends to raise the temperature of the belt ends to their thermoplastic melting point, removing the heating element while continuing to press the ends into contact to fuse the ends.

50. (New) The device of claim 1 further comprising solid state controllers producing an electrically pulsating current to modulate the duration of the electrical pulse through the hot wire.

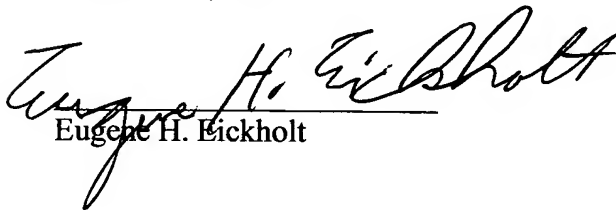
The Examiner's attention is drawn to new claims 12-50, which have been presented to more completely claim applicant's invention.

Respectfully submitted,


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December 29, 2006

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on December 29, 2006.


Eugene H. Eickholt

December 29, 2006